

# FIFTEEN MINUTES!

New York World,  
April 8, 1893.

## ITS TRIUMPH IN NEW YORK.

Identified with the Great Problem  
and Successfully Solved.

### THE RAPID TRANSIT TUNNEL.

When One Man Will Be Executed.

McDONALD.



provide that not more than 400 feet of roadway shall be opened at a time, and then only half the width of the street. No two openings can be nearer than 200 feet.

All the men working on the tunnel—laborers, axemen, rodmen, inspectors, diggers, masons, electricians—must be citizens of the United States. That is a requirement which will be absolutely insisted upon in all cases. The prevailing rate-of-wage law will apply throughout the tunnel construction. It is understood that the great work will be let to sub-contractors. They will furnish their own men and bonds for performance of contract. In this way the burden and annoyance of looking out for numerous individual applications will be minimized.

The salary list is something which has perplexed the chief engineer. It is difficult to even approximate the sum total. The material for the subway—tools, engines, instruments, etc.—will be furnished by the lowest bidder. There is no reason why the work should not proceed smoothly and rapidly. Deep tunneling, which will cover about two miles of the route, will be easier than the open-surface work. It is true that a grade of some extent (at one point the grade will be nearly one hundred feet below the surface) will be necessary, but that will not interfere with the speed of the trains to any extent.

### FOR MUNICIPAL CONSTRUCTION.

BY JOHN BOGART,  
Chief Engineer of Mayor Grant's Second Commission.

NEW Rapid-Transit law was passed by the Legislature in 1891 and the second commission came into existence. The Commissioners were William Steinway, John H. Inman, Samuel Spencer, Eugene L. Bushe and John H. Starin. The restrictions exempting certain streets were removed by the amendments and the commission seemed to have a fair opening.

All minds were still agreed that the solution of the rapid-transit problem was in an underground railroad, and two plans were ready for the examination of engineering experts. Octave Chanut, Joseph M. Wilson, Theodore Cooper and John Bogart were asked to examine and each to report on these and other plans. One was for four tracks on a level occupying a tunnel the whole width of Broadway from curb to curb, and the other was for a double-deck tunnel. The engineers decided in favor of the former, and in the Supreme Court April, 1892, appointed David McClure, Benjamin Perkins and Robert Macley to take testimony and report on the feasibility of the plan. Two months later this board reported favorably and its report was confirmed by the Court.

On Nov. 12, 1892, the Commissioners advertised the franchise for sale to the highest bidder. The estimated cost of construction of the road by the figures of the Board of Experts was \$50,000,000. When the day came for the sale of the franchise for a tunnel road from the Battery to the city line by way of the Broadway and Boulevard route, with a branch from Union Square up Fourth Avenue to the Grand Central Depot, only one bidder appeared. His bid—or rather bids—was \$600 and an alternate of \$1,000. Of course both bids were rejected.

The tunnel plan had proved a flat failure, seemingly, when the Manhattan Elevated Railway Company came forward with a proposition involving extensive enlargement of the privileges of that company and the extension of the lines of the "L" to the city limits. These proposals were rejected by the Commissioners after many conferences with J. P. Morgan, George Gould, Russell Sage, Samuel Sloan and R. H. Gallatin, of the Manhattan Company. The Commissioners still believed that the underground road was a possibility and the only solution of the question they had been set to solve. All the Commissioners save Mr. Starin resigned in June, 1893. Then began the agitation for municipal construction of the road. It being argued that it had been demonstrated that private capital could not be induced to undertake so vast an enterprise. The resigned Commissioners were re-appointed, and they and the chief engineer, John Bogart, who had an able assistant in the present Chief Engineer, W. B. Parsons, performed the engineering for and laid out substantially the same route that was finally adopted.

In May, 1894, a new Rapid-Transit law was passed, creating a commission in which the Mayor, the Comptroller and the President of the Chamber of Commerce were made members by virtue of their positions respectively, and Alexander E. Orr, Beth Low, John Claflin, William Steinway, John H. Inman and John H. Starin were named as members of the commission. This commission carried the tunnel project to the successful conclusion which is being celebrated to-day.



ALEXANDER E. ORR,  
President of Rapid Transit  
Commission.



MORRIS A. JESUP,  
Commissioner.

### HOW RAPID TRANSIT WAS REACHED.

BY GEORGE L. RIVES,  
Member of the Present Commission.

WHEN I came into the Rapid-Transit Commission, in the autumn of 1892, it had made a report laying out a route up Broadway, which had been approved by the city authorities and by the so-called Coudert commission, appointed by the Supreme Court to take testimony and report to the Court. That plan came before the Appellate Division of the Supreme Court, which rejected it on the grounds that the probable cost had not been ascertained and that the plan did not contemplate a road from one end of the city to the other.

The estimated cost of the road by these plans was \$50,000,000. The Court thought that \$25,000,000 was all the city ought to invest, and that the road ought to extend to the city boundaries. The plans came back to us.

The problem then was to devise a railroad substantially from one end of Manhattan to the other end of the city for \$25,000,000.

We set ourselves to solve this problem, and we did it by abandoning any road running along the east side of Central Park, abandoning the construction of pipe galleries in conjunction with and as a part of the tunnel work, and abandoning Broadway, the natural route. Thus we were enabled to devise a route and plans which came within the prescription of the Court.

These defects, I think, will be cured in time. If the road is a success, which I feel sure it will be, we shall have a road on the east side starting from the Grand Central Station and following up Lexington or Madison Avenue, joining the main line now projected near the Harlem River; also a road from near the Post-Office up or west of Broadway, joining the projected road at Forty-second street.

This system, if it is coupled together with the line up Central Avenue, formerly Jerome Avenue, in the Bronx, will give nearly an ideal system of rapid transit, especially if Mr. McDonalD, or the operating company to whom he may assign his contract, will be able to make satisfactory arrangements for an exchange of traffic by means of a physical exchange of cars with the New York Central, the Harlem and the New Haven roads.

There ought to be no difficulty in running cars from the Post-Office to Tonawanda over the Rapid-Transit route and thence over the New York and Putnam branch of the New York Central, or from the Post-Office to White Plains and other points over the New York and Harlem, or to Mount Vernon, New Rochelle or Stamford over the tracks of the New York, New Haven and Hartford by connection at West Farms. It would necessitate the putting in of electrical equipment on these roads probably, but that is of small moment.



ROBERT A. VAN WYCK,  
MAYOR OF GREATER NEW YORK.

Under his administration the work of building the subway which is to give New York rapid transit has been begun.

### CITY'S GREATEST IMPROVEMENT.

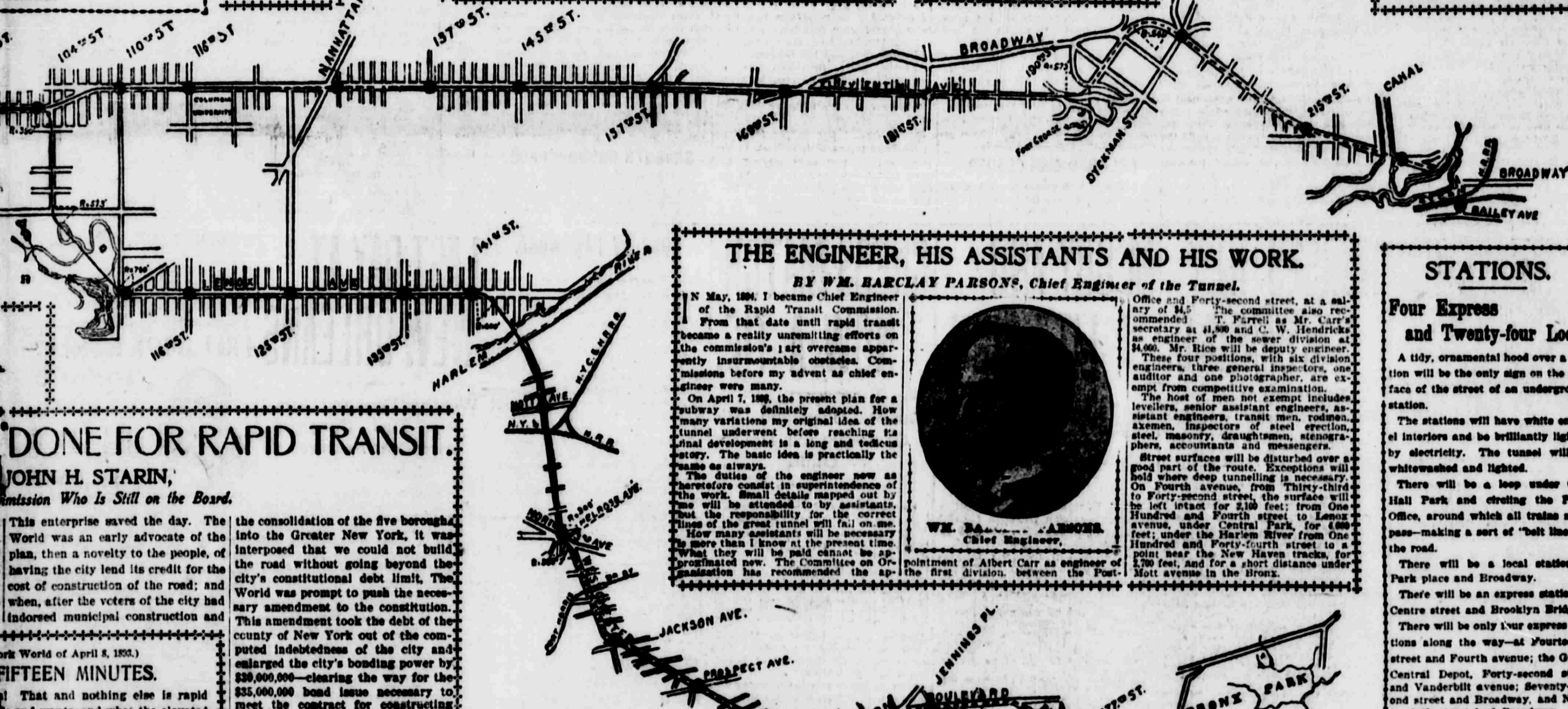
BY HERBERT H. VREELAND,  
President of Metropolitan Street Railway Company.

WHATEVER I might say by way of prophecy regarding the business that will be done by the underground railroad, or the probable speed of trains, or the chances of a realization of the commuters' dream of through trains on the underground road to suburban points on the New York Central, New Haven, Harlem, New York and Putnam and other roads, would be construed as the expression of one talking for a purpose.

I will say, however, that the Metropolitan Street Railway Company has not secured the contract for the operation of the underground road, has not made overtures looking to such a consummation, and has not even considered the possibility or the practicability of such an arrangement.

I can without fear of misconception express my own personal belief, as a citizen and as an expert in railroad matters, on the general, broad proposition of the effect of the movement inaugurated to-day upon the growth, expansion and development of the city.

And my opinion is that there has never been any great work of equal importance in the history of the city; no work that will be of the value to the city that the completion of this underground railroad will prove.



### DONE FOR RAPID TRANSIT.

JOHN H. STARIN,  
Commissioner Who Is Still on the Board.

This enterprise saved the day. The World was an early advocate of the plan, then a novelty to the people, of having the city lend its credit for the cost of construction of the road; and when, after the voters of the city had endorsed municipal construction and the consolidation of the five boroughs into the Greater New York, it was interposed that we could not build the road without going beyond the city's constitutional debt limit, The World was prompt to push the necessary amendment to the constitution. This amendment took the debt of the county of New York out of the computed indebtedness of the city and enlarged the city's bonding power by \$20,000,000—clearing the way for the \$35,000,000 bond issue necessary to meet the contract for constructing the road.

These things give The World special reason for congratulating itself to-day on its public spirit and its persistence.

### AN ARDENT CHAMPION.

By Alexander E. Orr.

The newspaper press has been of great help to us. The World has been the ardent champion of rapid transit by the underground plan for fifteen years. Indeed, I believe it was the first. The other papers, with one exception, have advocated our plans with conspicuous public spirit.

### LONDON'S "SUB."

London has the greatest underground railway system in the world. It is 100 miles in extent and cost about \$20,000,000. The first train was run in 1825. Three tunnels (two 120 yards long, another 75 yards long and a third 41 yards long) have been pierced for these underground lines. Over 100 locomotives, each carrying from 5 to 7 cars, are used, and more than 15,000,000 passengers are carried annually.

### THE LAWS.

Measures That Made Rapid Transit Possible.

RAPID TRANSIT ACT OF 1891, under which the "L" road was built and Mayor Grant's first commission was appointed. ACT OF 1892, removing restrictions forbidding a railroad over, under, on or across Broadway, parts of Fifth and Sixth Avenues, and other thoroughfares. VARIOUS AMENDMENTS, 1892 to 1893, relieving the Commissioners of burdens and restrictions. ACT PERMITTING MUNICIPAL CONSTRUCTION. VOTE OF THE PEOPLE IN 1894 in favor of municipal construction. ACT OF 1894, permitting municipal transit subway.

### THE ENGINEER, HIS ASSISTANTS AND HIS WORK.

BY WM. BARCLAY PARSONS, Chief Engineer of the Tunnel.

IN May, 1894, I became Chief Engineer of the Rapid Transit Commission. From that date until rapid transit became a reality unremitting efforts on the commission's part overcame apparently insurmountable obstacles. Commissioners before my advent as chief engineer were many.

On April 1, 1893, the present plan for a subway was definitely adopted. How many variations my original idea of the tunnel underwent before reaching its final development is a long and tedious story. The basic idea is practically the same as always.

The duties of the engineer now as heretofore consist in superintendence of the work. Small details mapped out by me will be attended to by assistants, but the responsibility for the correct lines of the great tunnel will fall on me. How many assistants will be necessary is more than I know at the present time. What they will be paid cannot be approximated now. The Committee on Organization has recommended the appointment of Albert Carr as engineer of the first division, between the Post-Office and Forty-second street, at a salary of \$4,500. The committee also recommended T. Farrell as Mr. Carr's secretary at \$1,500 and C. W. Hendricks as engineer of the sewer division at \$1,000. Mr. Rice will be deputy engineer. These four positions, with six division engineers, three general inspectors, one auditor and one photographer, are exempt from competitive examination. The host of men not exempt includes: levelers, senior assistant engineers, assistant engineers, transit men, rodmen, axemen, inspectors of steel erection, steel masons, draughtsmen, stenographers, accountants and messengers.



WM. BARCLAY PARSONS,  
Chief Engineer.

Street surfaces will be disturbed over a good part of the route. Exceptions will be held where deep tunneling is necessary. On Fourth Avenue, from Thirty-third to Forty-second street, the surface will be left intact for 210 feet; from One Hundred and Fourth street to Lenox Avenue, under Central Park, for 600 feet; under the Harlem River from One Hundred and Forty-fourth street to a point near the New Haven tracks, for 230 feet. And for a short distance under Mott Avenue in the Bronx.

### STATIONS.

Four Express  
and Twenty-four Local.

A tidy, ornamental hood over a station will be the only sign on the surface of the street of an underground station.

The stations will have white enamel interiors and be brilliantly lighted by electricity. The tunnel will be whitewashed and lighted.

There will be a loop under City Hall Park and circling the Post-Office, around which all trains must pass—making a sort of "belt line" of the road.

There will be a local station at Park place and Broadway.

There will be an express station at Centre street and Brooklyn Bridge.

There will be only four express stations along the way—at Fourteenth street and Fourth Avenue; the Grand Central Depot, Forty-second street and Vanderbilt Avenue; Seventy-second street and Broadway; and Ninety-sixth street and Broadway.

But the trains will make the forty-mile-an-hour express time provided for in the contract from One Hundred and Fourth street on the west side and One Hundred and Tenth street and Lenox Avenue on the east side, and from higher points, too, by a system of omitted stations for express trains on either route.

There will be in all twenty-eight stations.

### POWER—SPEED.

The motive power will be electricity, unless some other, better power is discovered before the road is completed in 1895.

Rapid Transit express trains will run at a speed of forty miles an hour.

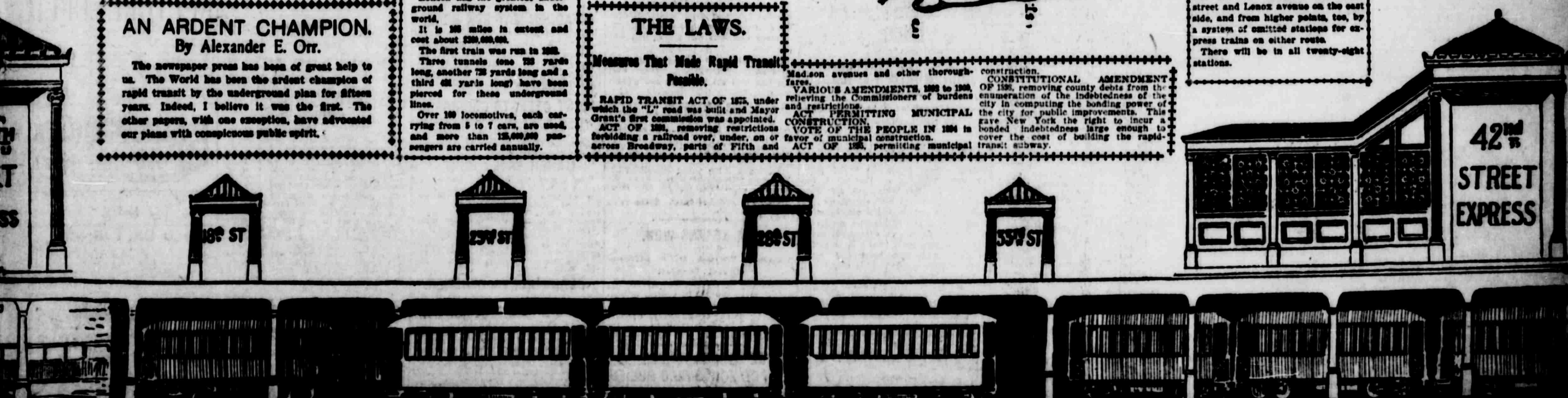
The time to Ninety-sixth street, Harlem, will be 14 minutes, and time to Kingsbridge or Bronx Park will be only 6 minutes.



GEORGE A. VREELAND,  
Commissioner.



EDWARD A. TAMM,  
Commissioner.



ING BETWEEN THOSE POINTS AND THE ARCHITECTURE OF THE HOOD WHICH WILL COVER EACH OF THE TWENTY-EIGHT TUNNEL